NEW BANK, NORTHAMPTON.

Our engraving represents the entrance-front of the new bank now erecting in Northampton, adjoining the new Corn Exchange, under the direction of Mr. E. F. Law, architect.

The entablature to Venetian window is supported by pillars and antæ. The second story windows have columns of the Composite order, with pedestals resting partly on the front, which recedes 6 inches at the string course, and partly on trusses formed in the string course. The next windows have pilasters and architraves, with consoles and heads. The upper cornice has lions' heads on the corona, and modillions and dentils below, with an enriched frieze.

The plinth is of Derbyshire stone: all the other parts are of Bath stone. The building is fast progressing, and is to be completed by August. The amount of the contract is about 1,900*l*. The large Venetian window lights the bank.

MODE OF DOING BRICKWORK IN THE METROPOLIS.

I believe one object of your journal is to examine and criticise the general practice of the building trade,—to point out the excellencies and advantages of harmonious design, permanent and sound mode of construction, skilful and sound workmanship, and the disadvantages of defective design, unsound mode of construction, and unskilful and unsound workmanship. Your judicious observations on these points are doing much good. By showing the defects in any branch of trade, there is necessarily induced a tendency to alter and amend, be it design, mode of construction, or workmanship. This may be said to be the great period of progress and improvement: in many branches of science and art, rapid and unprecedented progress has been made, and works and discoveries without parallel; hence we hear, in engineering, of subterranean highways and aerial bridges, to wit, a Thames tunnel, and a tubular bridge. Now, Sir, can nothing be done to improve my branch of trade—bricklaying? You have said something, but pray say more. It is in a deplorable condition: for one proof, take the following case, tried at the Southwark County Court last week.

A bricklayer claimed a sum of money from a builder, for doing the brickwork of St. Paul's Church, Rotherhithe. The principal evidence against the claim was, that the work had been done in so defective a manner, that it was valued (according to evidence) at the very novel sum of 16*s*. per rod. Now, how can there be expected any improvement in our branch of the trade, when work at the above value is *allowed to be done*, both by builder and architect: is it possible that work of such a quality could be doue and neither builder nor architect see it; and if it were seen, why not stop such? Sir, if defects had been pointed out, an improvement might have taken place in this case; and if not, why did not those responsible for the proper execution of the work stop it? The monuments of Egypt and Greece would not have remained to us examples for study but for sound workmanship. But as to St. Paul's, Rotherhithe, and structures with such workmanship, they will have only this advantage, that they will not be *long* standing monuments of our carelessness and decline.

A Bricklayer.

Value of Property at Sheffield.—According to the local *Times* there is "an increased abundance of capital" at Sheffield, where, "not many months since, it was next to impossible to effect sales of property for investment at anything like reasonable prices." In illustration of this, it cites the particulars of some of twenty-two lots of Messrs. Parker and Shore's Sheffield estates, sold there by auction last week. The first of these, 10½ acres of land, "admirably circumstanced for buildings," sold for 2,750*l*. Three leasehold houses, with workshop,—in all, 617 square yards in area, in Spring-street, thirty-three years unexpired, yearly ground rent, 45*s*.—sold for 130*l*. One 100*l*. share in the Sheffield Water-works sold for 158*l*.

CHEAPENING PATENTS.

It is no uncommon thing for a man in the conduct of his business to light upon some neat little modification of the usual way of working, which either takes a little off the prime cost of the article or adds some extra finish or appendage to it. The improvement is not of vast importance, nor perhaps of daily application, but he has spent some time and spoilt some material about it, and would like to make a little profit by it to put down on the other side of the account, by retaining its exclusive use and obtaining the aid of the law to secure him from depredation. On inquiry, however, he can learn of nothing in the shape of a patent under 120*l*., first cost; and being a prudent man, or perhaps not having the means of imprudence in his pocket, he gives that idea its dismissal. He recollects something about a registration office, obtains the printed copy of instructions, and cons them over. He is satisfied with the moderation of the fee, and would not quarrel with the duration of the right, but is also quite satisfied that his case is not within the Act, and is left to solace himself with the exercise of the Englishman's oldest privilege—the right of grumbling. Now, many such cases as these would be relieved by the system of semi-patents, viz., grants for half the standard duration, and at half the cost. Similar gradations exist in most continental states, and something closely analogous has been grafted on the patent law of the United States, which, in its general feature, is the same as our own.

We need not, however, look for arguments abroad. Our own patents have been made capable of extension, under additional expenses, to twice the usual period. This proposal is merely to allow a corresponding variation in the opposite direction to adjust the other end of the line. Admitting that a term of fourteen years was sometimes too short, excites intrinsically a suspicion of its being occasionally too long. At all events, let the inventor take a short term if he be willing. You throw obstacles in the way of extension, placing an *avvocato del diavolo* to oppose the grant at the Privy Council: there should be a premium on curtailment.

The plan, it must be confessed, is open to the objection made to *cheap* patents. Now, what do these amount to? Let us enumerate the leading ones:—

1. Patents would be taken for mere puffs?—Answer. A 50*l*. advertisement duty would be a good bargain for the public.

2. It would bring all sorts of difficulties among the aristocracy of inventors, the present patentees?—It would take a different and lower range of subjects; and, moreover, by multiplying the number of patentees, give them weight as a class.

3. Worthless trivial inventions, which prevent others from cultivating ground which they only encumber?—The *immediate* effect of all patents is to check competition and favour the inventor: in this point a monopoly of seven years costs the state less than one of fourteen.

4. Trouble of searching lists of numerous patents?—If a man buys land, he must pay for investigating title.

5. Increase of litigation?—An unfortunate accompaniment of property and civilization. Only two remedies are applicable: communism, which leaves no individual anything to go to law about; and Jack Cade's plan of hanging the lawyer.

6. A patent to a poor man is a curse (Mr. Carpmael); not one in five pay (Mr. Webster)?—There are always benevolent people to tell the poor man that money is the root of all evil, and that a little learning is a dangerous thing. The gravedigger was right in complaining that only rich people had leave to drown themselves.

8. Many experienced patent men are unfavourable to it?—In a recent debate the House of Commons was warned of the necessity of a little incredulity as to professional impossibility of reform.

9. "Every journeyman in every factory will have his patent?"—Did Sir R. Peel anticipate good or evil from that? If a considerable part of the community hold copyright, the moral standard will be raised, on the same principle that a savings bank prevents robbery more efficiently than an army of policemen.

9. A manufacturer could not twist a bar of iron in peace?—Manufacturers must not trespass on their neighbours' ground. All the land in the kingdom is appropriated. You cannot pick a mop off a highland moor without the Duke's leave.

10. Patents do increase as it is?—The question is whether inventions increase faster.

11. No invention of real merit falls to the ground?—It is very odd that all really meritorious inventions should be worth *risking* 120*l*. upon.

12. It would give trouble to the office?—Patents are not established for the benefit of the Government, any more than letters are written for the good of the Post-office.

The main recommendation of the plan proposed is its simplicity; it does not involve the discussion of any new principle or any need of a cumbrous and verbose Act of Parliament. And as it would offer no impediment to the amelioration of the patent system in any other direction, it is thought that inventors might for such an object lay aside those conflicting theories and discrepancies which seem to have nullified all previous appeals to the Legislature.

Such a measure might advantageously be followed by the removal of the Utility Design Act, a sort of cross breed between patent amendment and ornamental copyright, which was not properly squared to either one or the other system, and which has been little trusted to, except for puffing and pretence.

MALLEABLE AND CAST IRON BEAMS.

ON THE REMOVAL OF CASTINGS FROM THE SAND WHILE HOT.

It is common, particularly in small foundries where economy of space is necessary, to remove the castings of beams from the sand while hot. The inducement to this practice is the economy in sand it effects, for if the castings be allowed to cool before the removal, the sand near the casting becomes burnt and destroyed, and when it is remembered that this sand is of a peculiar kind, and is often brought from a considerable distance, the temptation to economize with it will be readily understood.

The sudden refrigeration from a premature exposure to the air causes a brittle texture; for cast iron, like steel or glass, has its hardness and brittleness increased by rapid cooling. In castings of variable thickness, it often happens, in spite of careful treatment, that from the unequal tension of the different parts arising from the unequal rate of contraction in cooling, flaws and rents are formed, and there can be little doubt, that in many cases in which this tension has not made itself thus apparent, it has had the effect of permanently weakening the casting. Thus, in the case of a beam removed red hot from the sand, and which presents the favourable condition of equal thickness in all parts, the exterior will cool more rapidly than the interior, and the consequence of this inequality must be a disturbance of that molecular arrangement, which is the normal state of the metal: the outer part being more rapidly cooled is also more brittle, and the consequence of this unstable equilibrium of the particles must be to diminish the strength of the casting; therefore to be prepared against all such contingencies of manufacture, it would be advisable the beam should be tested with a suitable weight, for even with the utmost care on the part of the founder, there is frequently an inequality in the iron though produced from the same furnace.

Much of the uncertainty attending the use of cast iron; might be obviated by the adoption of malleable iron beams, which could without difficulty be worked to any size that might be required by means of a Nasmyth's steam-hammer and powerful rolling mills. As has been several times urged in The Builder, if an annual premium or honorary distinction were offered for the best specimen of rolled beams for building purposes, it would induce manufacturers of reputation to enter into the competition, and a very short time would suffice to effect such improvements in the details of the work as are only likely to be perfected in the prospect of a steady and increasing demand.

Iron as a material for ship-building has been

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